



# Barwon Water Site – Development Feasibility Study

Final Report

City of Greater Geelong

18 | 11 | 2021





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# 1. Introduction

## 1.1 Purpose

The City of Greater Geelong has commissioned SGS Economics and Planning and m3property to undertake a development feasibility study for the Barwon Water Site at 40-44 Lonsdale Street and 49 Carr Street in South Geelong. The development feasibility study determines whether or not the development is feasible under various market conditions, development scenarios, planning controls and sensitivity tests.

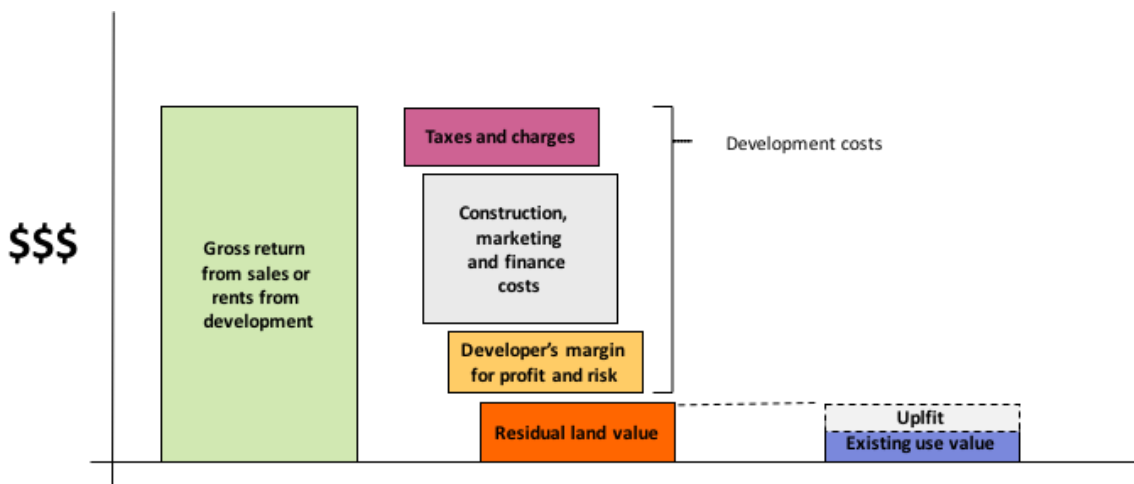
This site was highlighted in South Geelong’s UDF as a potential site for a medium or high-density development, in line with their development strategy. Currently, the Geelong residential market is undergoing change as townhouses are becoming established, and apartments are beginning to be developed. Current market conditions for high density developments in Geelong are subdued, with very few development sites from which to draw evidence.

## 1.2 Development feasibility

Development feasibility analysis compares costs and revenues of a hypothetical development to determine if the project would be financially viable. A key test for financial viability is to look at the residual land value (RLV) from a hypothetical development.

Residual land value (RLV) can be defined as the maximum amount a rational developer will pay a seller for a site for redevelopment. RLV is estimated by deducting the anticipated development costs from the anticipated revenues. This is shown conceptually in Figure 1.

**FIGURE 1: RESIDUAL LAND VALUE AND EXISTING USE VALUE**



Source: SGS Economics & Planning

## **1.1 Approach and report outline**

In approaching this study, SGS undertook the strategic review, while m3property undertook the technical market and feasibility analysis. Together, we worked with council to review the development sites, prepare and test development scenarios, run sensitivity tests and discuss the implications for the Barwon Water Site development.

This report captures that process and is set out in the following sections:

- Section 2 looks at demand for high density apartment housing in Geelong
- Section 3 describes the development scenarios tested in the feasibility analysis
- Section 4 explores the results of the analysis and sensitivity tests
- Section 5 reports the findings, implications and conclusions.

The Attachment to this report provides m3property's sales evidence which informed the feasibility modelling.

## 2. Demand for apartments in Geelong

### 2.1 Population growth

Greater Geelong is the largest of Victoria's regional cities and provides the largest contribution to non-metropolitan population growth in the state. It is estimated to have around 268,984 residents in 2021.

The population of Greater Geelong has grown by 38 per cent since 2001<sup>1</sup>. This is faster than regional Victoria (21.7 per cent), but behind the growth of Greater Melbourne (47.4 per cent).

An analysis of annual growth rates in more recent years shows that Geelong has reached the same levels of growth as Greater Melbourne (see Table 1). Between 2001-2011, the difference in growth was around -0.7 per cent and around -0.4 between 2011 and 2016. By 2016-2019, Geelong had overtaken Greater Melbourne.

**TABLE 1: POPULATION GROWTH 2001-2020**

Year	Greater Geelong	Rest of VIC	Greater Melbourne
2001	194,898	1,263,366	3,500,249
2006	204,822	1,300,506	3,760,760
2011	219,107	1,368,451	4,169,366
2016	242,682	1,458,785	4,714,387
2019	262,191	1,517,757	5,079,123
2020	268,180	1,537,459	5,159,211
<b>Growth 2001-2020</b>	<b>37.6%</b>	<b>21.7%</b>	<b>47.4%</b>
<b>Annual Growth 2001 – 2011</b>	<b>1.2%</b>	<b>0.8%</b>	<b>1.9%</b>
<b>Annual Growth 2011 – 2016</b>	<b>2.2%</b>	<b>1.3%</b>	<b>2.6%</b>
<b>Annual Growth, 2016-2019</b>	<b>2.7%</b>	<b>1.3%</b>	<b>2.6%</b>
<b>Annual Growth, 2020</b>	<b>2.3%</b>	<b>1.3%</b>	<b>1.6%</b>

Source: ABS 2021. Regional Population Growth 2019-20

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<sup>1</sup> Australian Bureau of Statistics 2021, *Regional Population 2019-20*.  
<https://www.abs.gov.au/statistics/people/population/regional-population/latest-release>

The COVID-19 pandemic has seen retained levels of growth for Geelong. The latest ABS data (released 30<sup>th</sup> March 2021) finds growth of around 2.3 per cent for Geelong, whereas Melbourne has fallen to 1.6 per cent. Future data will determine whether this Greater Melbourne will be able to return to its historically high pattern of growth, post pandemic.

Geelong is currently home to around 10 per cent of regional Victorians, with this expected to possibly grow to 50 per cent by 2050. Much of this population growth is underpinned by the strong performance of the local economy where employment has grown at twice the rate of population growth. In order to plan for the long term, an estimated 2.5 per cent annual population growth rate has been applied, meaning a population of around 500,000 residents by 2050.

The South Geelong UDF highlights the potential for the South Geelong train station to be a significant commuter station. The area around the station is nominated as an increased housing diversity area (IHDA), with medium to high density housing developments encouraged. Key development sites outlined in the plan include the Barwon Water site analysed in this feasibility study and the Commercial 2 Zoned land on the east side of Moorabool Street. Other plans in this area included a 2020-2036 retail strategy and the 2018-2041 Social Housing Plan.

Recent SGS analysis suggested that central Geelong alone requires 780 units of social and affordable housing in the next 30 years. This outcome would be achieved if all development – both residential and non-residential – contributed 0.017 sq metres of social housing floorspace at zero consideration for every 1 sq metre of gross floorspace.

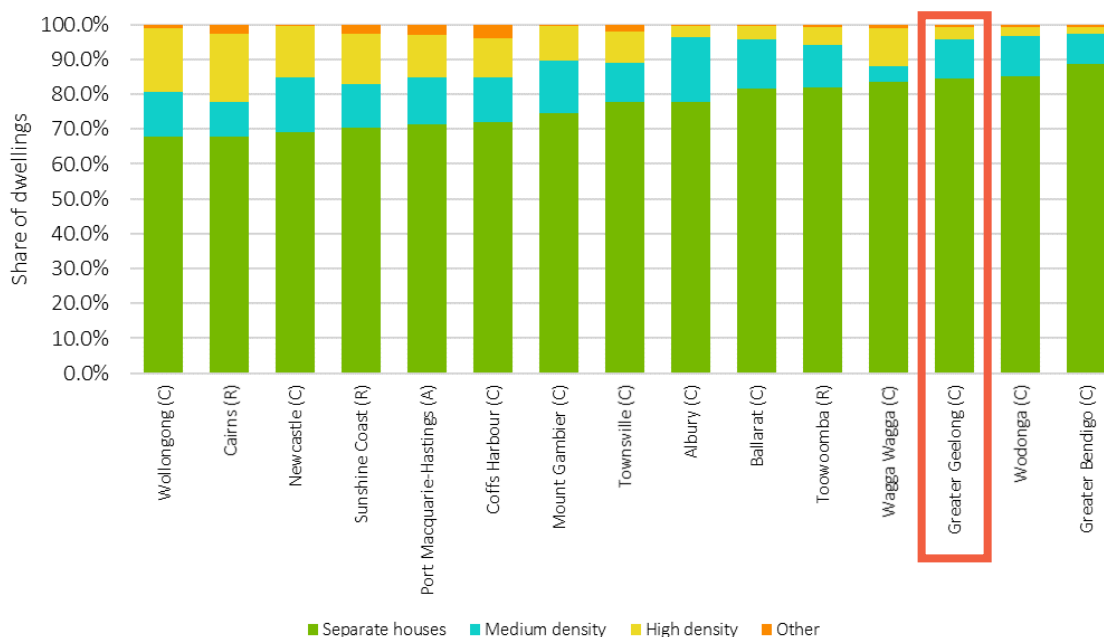
## **2.2 Dwelling stock**

Geelong has a markedly low share of apartments in its overall dwelling stock. Figure 2 below shows the mix of dwelling types for municipalities with the largest regional cities on the eastern seaboard of Australia. High density apartments make up on 3.4 per cent of dwellings in Geelong. This is in line with other Victorian regional cities, such as Ballarat, but much lower than other coastal regional cities. Newcastle, for example, has 14.5 per cent of its dwellings in apartment stock.

This overall mix was reflected in the sales evidence collected by m3property. There was limited evidence of off-the-plan apartment sales within the Greater Geelong region at the time of our research. There as one large, 109-apartment development being marketed, with 1 bed apartments between \$375k to \$495k, 2 beds for \$695k to \$895k and 3 bed for \$1,495,000. There were a larger number of sales of completed apartments, however, this was a largely inferior product with associated lower prices. These are detailed further in the appendix.

Alternatively, there are a number of recent townhouse transactions within Greater Geelong, with this product type being popular and well accepted. We consider this to be driven by the affordable nature of this dwelling type, in addition to purchasers being able to get better access to existing amenity and Geelong Town Centre, when compared to purchasing land in the growth corridors of Geelong (for example, in Armstrong Creek).

**FIGURE 2: DWELLING STRUCTURE BY LGA FOR REGIONAL CITIES**



Source: ABS, 2016

The relatively low level of apartment dwelling stock may be a result of preference for medium density (townhouse) and low density (detached) housing stock. However, there is evidence of a significant mismatch between the preferences of households and the housing supplied by the market.

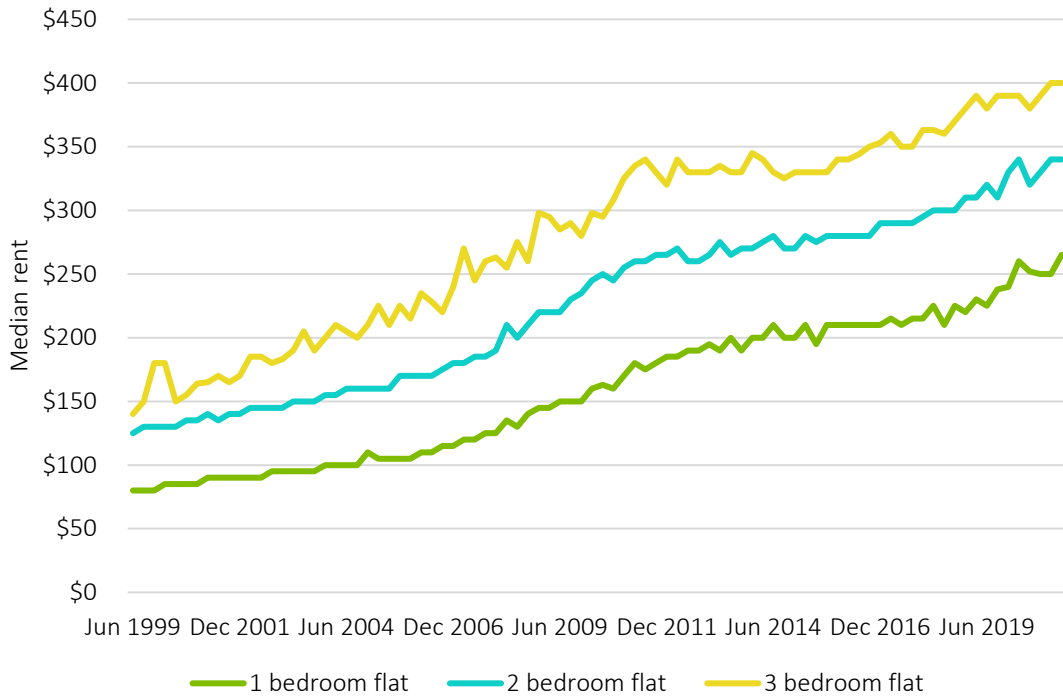
The Grattan Institute’s 2011 report, *The Housing We’d Choose*, suggested that there were significant shortages of apartments and semi-detached houses in Sydney and Melbourne. SGS has undertaken similar, more recent research into the housing preferences in regional settings in New South Wales (Lake Macquarie, Cessnock and Port Stephens). Our research found an undersupply of medium and higher density housing types (villa, duplex, flats etc) and an oversupply of separate houses.

The very low share of apartments in Geelong’s housing mix, paired with the strong population growth expectations indicates that, in time, demand for (and supply of) apartments will increase from its current low rate. However, the current sales evidence indicated that this is not likely in the short term.

### 2.3 Rental market indicators

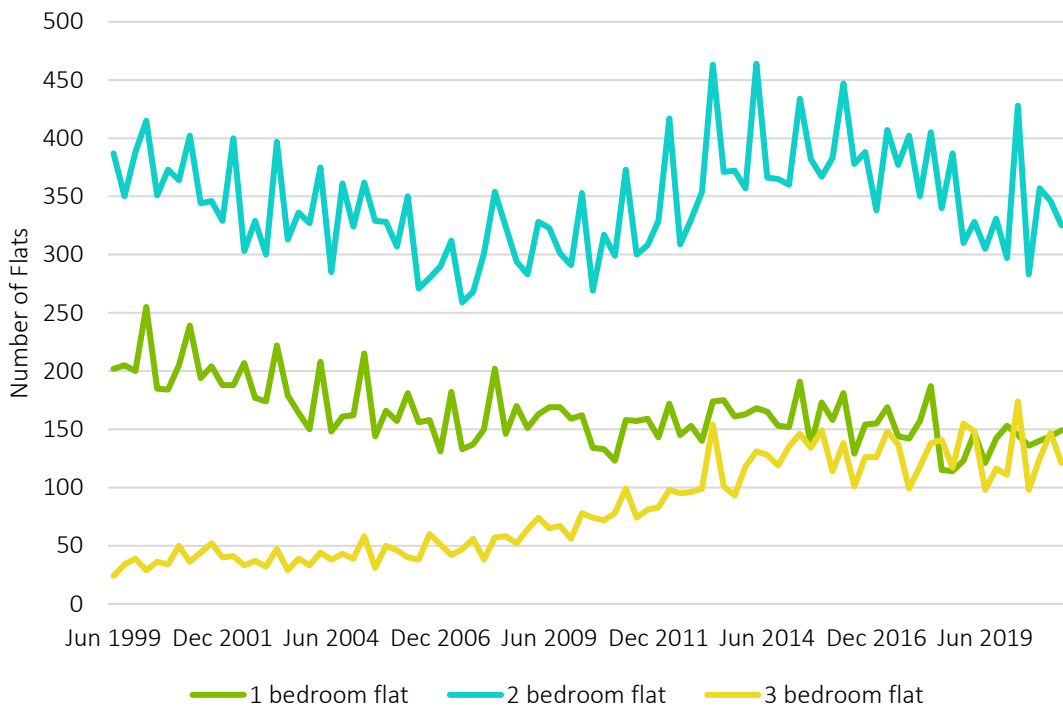
In lieu of 2021 ABS Census Data, recent rental data can provide further indications of demand for apartment dwellings. The graphs below use data from the Department of Health and Human Services to examine dwelling trends in Greater Geelong. Figure 3 shows a steady increase in median rent for flats in Geelong. However, Figure 4 shows that the number of new lettings in Geelong fluctuate, with a gradual increase in the number of 3 bedroom flats, while the number of 1 and 2 bedroom flats are mostly flat (albeit with seasonal variation).

**FIGURE 3: MEDIAN RENT FOR FLATS IN GREATER GEELONG**



Source: DHHS Rental Report 2021

**FIGURE 4: NUMBER OF NEW LETTING OF FLATS IN GREATER GEELONG**



Source: DHHS Rental Report 2021

Rents for flat are strong in comparison to rents for houses, as shown in Table 2. In particular, 2 bedroom flats having the growth rate of median rent in both periods.

Taken together, the growing rents of flats relative to houses indicates a small but noticeable shift in demand toward higher density housing forms.

**TABLE 2: GROWTH RATES OF MEDIAN RENTS IN GREATER GEELONG, BY PROPERTY TYPE**

Property types	2011-21 growth rate	2017-21 growth rate
1 bedroom flat	9%	3%
2 bedroom flat	47%	23%
3 bedroom flat	31%	17%
2 bedroom house	35%	17%
3 bedroom house	30%	18%
4 bedroom house	22%	15%
All properties	38%	21%

Source: DHHS Rental Report 2021

## 2.4 Outlook

While there are few signs of apartment developments in Geelong today, the outlook is likely to improve in the medium to long term. Geelong’s population is projected to grow significantly in the coming years, and a substantial amount of new dwellings will need to be constructed to meet that demand. The State Government’s *Victoria in Future* projections from 2019 estimate that an additional 43,000 dwellings we need to be supplied over the next 15 years. Even a small uptick in the *share* of apartments within the mix of new development – which could be driven by investment in transport infrastructure, local amenity and/or prices – would result in significant *number* of new apartments built in Geelong. However, this is yet to be seen in the available data and, without the benefit of a detailed housing demand study, it is difficult to provide reliable projections of how quickly demand for apartments will pick up.

# 3. Development scenarios

## 3.1 Study sites and specifications

This feasibility analysis examines the feasibility of two options, which reflect the South Geelong Urban Development Framework:

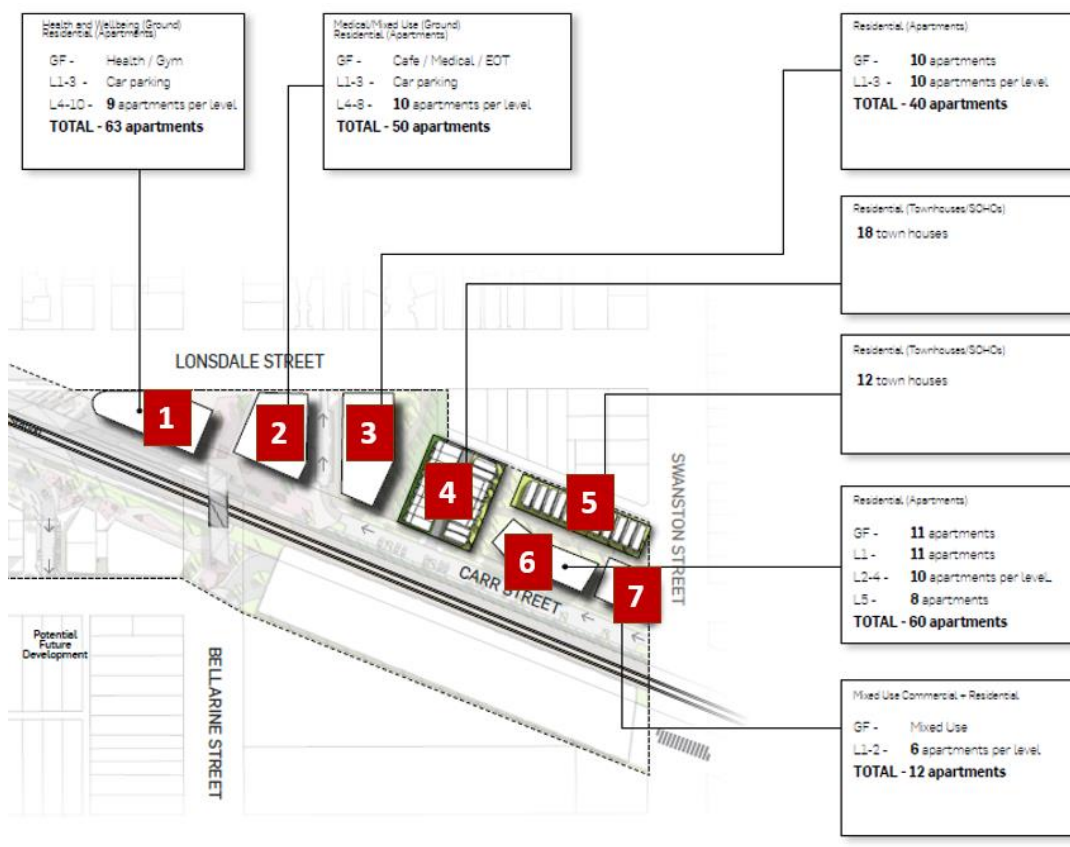
- Scenario 1: up to 10 storeys, reducing to 6 then 3 at the eastern end of the site.
- Scenario 2: up to 6 or 7 storeys reducing to 4 storeys to the eastern end of the site.

High level plans were provided by Clarke Hopkins Clarke’s, with buildings, floorplates, land use and dwelling numbers. Details of each site are provided in the table and maps below.

### Option 1

The first option looks at 7 sites, as highlighted in Figure 5. It consists of 10 storey, 8 storey, 5 storey, 3 storey and 2 storey apartment buildings, 30 town houses and some commercial/mixed use spaces.

**FIGURE 5: LOCATION OF FEASIBILITY TESTING CASE STUDY SITES IN OPTION 1**



Source: City of Greater Geelong, 2021

**TABLE 3: ATTRIBUTES OF FEASIBILITY TESTING CASE STUDY SITES IN OPTION 1**

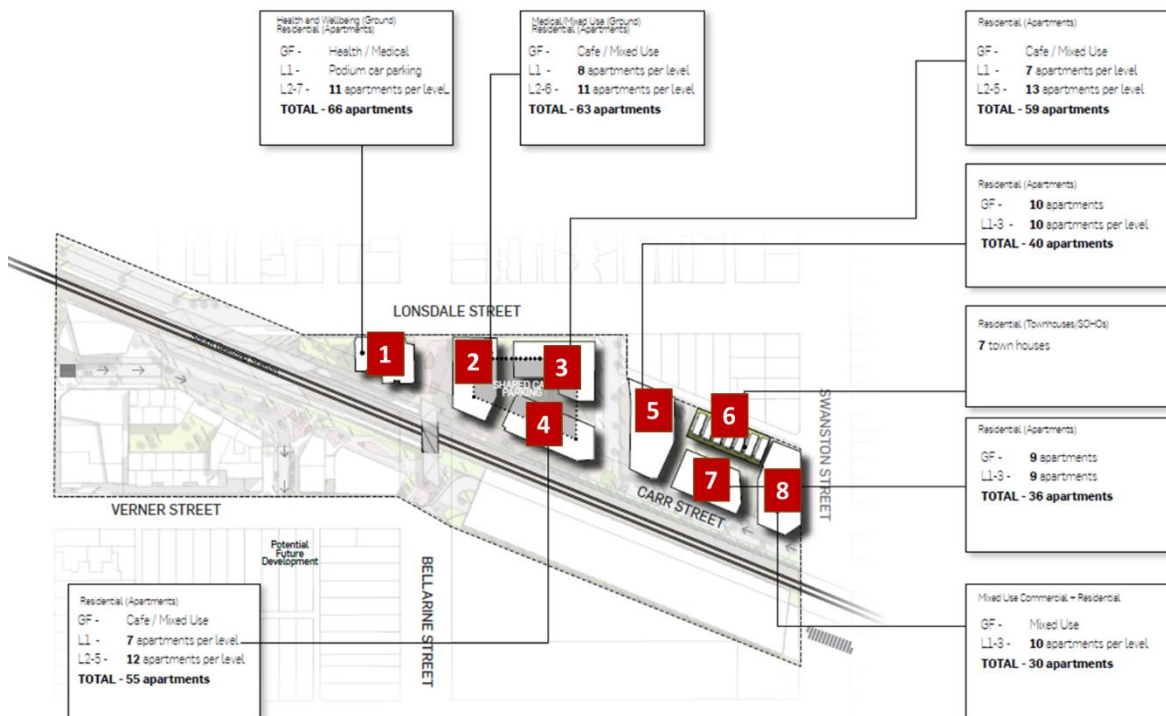
Option 1	No. of Apartments & Townhouses	Net Saleable Area (NSA) m <sup>2</sup>	Average Apartment Size	Total Project Period (months)	Total Project Period (years)
Site 1	63	6,050m <sup>2</sup>	96m <sup>2</sup>	31	2.58
Site 2	50	4,625m <sup>2</sup>	93m <sup>2</sup>	28	2.33
Site 3	40	2,900m <sup>2</sup>	73m <sup>2</sup>	28	2.33
Site 4	18	3,240m <sup>2</sup>	180m <sup>2</sup>	20	1.67
Site 5	12	2,400m <sup>2</sup>	200m <sup>2</sup>	18	1.50
Site 6	60	3,600m <sup>2</sup>	60m <sup>2</sup>	31	2.58
Site 7	12	995m <sup>2</sup>	83m <sup>2</sup>	18	1.50

Source: m3property, 2021

### Option 2

The second option looks at 7 sites, as highlighted in Figure 6. It consists of 7 storey, 6 storey, 2 5 storey, 3 3 storey apartment buildings, 7 town houses and some commercial/mixed use spaces.

**FIGURE 6: LOCATION OF FEASIBILITY TESTING CASE STUDY SITES IN OPTION 2**



Source: City of Greater Geelong, 2021

**TABLE 4: ATTRIBUTES OF FEASIBILITY TESTING CASE STUDY SITES IN OPTION 2**

Option 2	No. of Apartments & Townhouses	Net Saleable Area (NSA) m <sup>2</sup>	Average Apartment Size	Total Project Period (months)	Total Project Period (years)
Site 1	66	3,630m <sup>2</sup>	55m <sup>2</sup>	32	2.67
Sites 2, 3 & 4	177	12,730m <sup>2</sup>	72m <sup>2</sup>	45	3.75
Site 5	40	3,750m <sup>2</sup>	94m <sup>2</sup>	24	2.00
Site 6	7	1,650m <sup>2</sup>	236m <sup>2</sup>	17	1.42
Site 7	36	2,700m <sup>2</sup>	75m <sup>2</sup>	24	2.00
Site 8	30	3,250m <sup>2</sup>	108m <sup>2</sup>	23	1.92

Source: m3property, 2021

### 3.2 Development assumptions

Table 5 lists the key assumptions used in the base feasibility testing. The City of Greater Geelong specified a range of planning requirements that apply to each of the identified development scenarios. These include parking, open space and external works and services. The assumed revenues were estimated via m3property's sales evidence, which is provided in the Attachment to this report.

In addition to those detailed below, m3property adopted construction cost assumptions from *Rawlinsons Construction Cost Guide* as well as standard industry assumptions for other costs such as selling, finance, agent fees and others. The profit and risk rate varies across sites according to the development size and land use type, with industry standards typically requiring a larger risk margin for larger sites.

**TABLE 5: KEY ASSUMPTIONS FOR BASE CASE FEASIBILITY**

Assumption	Value	Notes
Revenue - Apartments (High Density)	\$6,500	/m <sup>2</sup> NSA
Revenue Apartments (Low Density)	\$7,000	/m <sup>2</sup> NSA
Townhouses	\$5,000	/m <sup>2</sup> NSA
Revenue - Ground Level Commercial	\$4,500	/m <sup>2</sup> NLA
Parking Rate - Residential	0.75	Spaces/dwelling (basement)
Parking Rate - Commercial	1	Spaces/100m <sup>2</sup> NSA (basement)
Selling Costs (residential)	4.25%	% of GRV
Selling Costs (commercial)	3.25%	% of GRV
Professional Fees	8.00%	% of Build Costs
Project Management Fees	2.00%	% of Build Costs
Contingency	10.00%	% of Build Costs
Council Fees and Authority Chargers	1.00%	% of Build Costs

Public Open Space	10.00%	% of Estimate Site Value
Basement Car Park Construction	\$55,000	/car space
Above Ground Car Park Construction	\$20,000	/car space
Balcony	\$1,300	/m <sup>2</sup> Balcony Area
External Works and Services	10%	% of Build Costs
External Works and Services	5%	% of Build Costs
<b>Option 1</b>		
Profit and Risk (Sites 4, 5 & 7)	15.00%	On costs
Profit and Risk (Sites 2 & 3)	17.50%	On costs
Profit and Risk (Sites 1 & 6)	20.00%	On costs
<b>Option 2</b>		
Profit and Risk (Site 6)	15.00%	On costs
Profit and Risk (Sites 5, 7 & 8)	17.50%	On costs
Profit and Risk (Sites 1, 2, 3 & 4)	20.00%	On costs

Source: m3property, 2021

### 3.3 Sensitivity tests and alternative development scenarios

Variations on the base case modelling were run to test the sensitivity of the results to variations in market conditions and understand the relative impact of some of the key development factors.

Three sensitivity tests were run:

- Varying total costs by 5 per cent, 10 per cent and 20 per cent
- Varying total revenues by 5 per cent, 10 per cent and 20 per cent
- Introducing a social housing contribution of 2.2 per cent of floorspace.

These tests were run on three sites, which were selected to give an overall indication of the robustness of the feasibility for town house (Option 1, Site 4), mid rise apartment development (Option 1, Site 3) and higher rise apartment development (Option 1, Site 1).

### 3.4 Limitations

The feasibility analysis in this project is based on high-level assumptions about development costs and revenues that have been applied across all sites and development types. The actual costs and revenues for specific developments will vary on a site by site basis.

This modelling has not had the benefit of detailed designs for each site. The net lettable floor space in each scenario has been generated by multiplying the notional floor area ratio by the building efficiency (ratio of gross floor space to net lettable floor space).

## 4. Feasibility test results

### 4.1 Base case results

The base case feasibility results are shown in the tables below. Under the first option, Site 2, 3, 6 and 7 all had negative RLV's, with Site 3 (medium density apartments) having the lowest RLV of -\$4,200,000. Site 1, a high density mixed use building had a RLV of \$1,600,000, while the townhouses had a RLV of \$3,100,000 and \$2,300,000 respectively.

**TABLE 6: BASE CASE FEASIBILITY RESULTS – OPTION 1**

Site	Typology (storeys)	Total Cost (ex GST)	Total Gross Realization	Residual Land Value	Residual Land Value per sqm NSA
Site 1	Mixed Use - High density (10)	\$27,190,000	\$43,150,000	\$1,600,000	264m <sup>2</sup>
Site 2	Mixed Use - High density (8)	\$25,690,000	\$34,562,500	-\$1,700,000	-368m <sup>2</sup>
Site 3	Apartments - Medium density (3)	\$21,970,000	\$25,475,000	-\$4,200,000	-1,448m <sup>2</sup>
Site 4	Townhouses - Low density	\$8,100,000s	\$16,200,000	\$3,100,000	957m <sup>2</sup>
Site 5	Townhouses - Low density	\$6,000,000	\$12,000,000	\$2,300,000	958m <sup>2</sup>
Site 6	Apartments – High density (5)	\$17,340,000	\$25,200,000	-\$600,000	-167m <sup>2</sup>
Site 7	Mixed Use - Medium density (2)	\$7,490,000	\$8,765,000	-\$1,300,000	-1,307m <sup>2</sup>
<b>Total</b>		<b>\$113,780,000</b>	<b>\$165,352,500</b>	<b>-\$800,000</b>	

Source: m3property, 2021

Under Option 2, Site 1, 2, 3 & 4 had negative RLV's, with Site 1 having the lowest RLV of -\$2,000,000. The townhouses had the highest RLV at \$1,600,000, while the rest of the sites ranged from \$400,000 to \$1,600,000.

**TABLE 7: BASE CASE FEASIBILITY RESULTS – OPTION 2**

Site	Typology (storeys)	Total Cost (ex GST)	Total Gross Realization	Residual Land Value	Residual Land Value per sqm NSA
Site 1	Mixed Use - High density (7)	\$19,620,000	\$26,160,000	-\$2,000,000	882m <sup>2</sup>
Site 2-4	Mixed Use - High density (6-5)	\$67,030,000	\$98,245,807	-\$500,000	628m <sup>2</sup>
Site 5	Apartments - Medium density (3)	\$16,470,000	\$26,250,000	\$1,200,000	967m <sup>2</sup>
Site 6	Townhouses	\$4,130,000	\$8,250,000	\$1,600,000	467m <sup>2</sup>
Site 7	Apartments - Medium density (3)	\$12,370,000	\$18,900,000	\$400,000	100m <sup>2</sup>
Site 8	Mixed Use - Medium density (3)	\$15,450,000	\$23,650,000	\$600,000	103m <sup>2</sup>
<b>Total</b>		<b>\$135,070,000</b>	<b>\$201,455,807</b>	<b>\$1,300,000</b>	

Source: m3property, 2021

The results above indicate that townhouses are a healthy product in the current market. There are mixed results for medium density (2-3 storeys) and high density (5-10 storeys) apartment developments, with many of the sites sitting just above or below the breakeven point.

Finally, while there is significant variation across all sites in the precinct, the sum of all costs and revenues results in a small loss under option 1 (-\$800,00) and a small gain under option 2 (\$1,300,000). Option 2 has a more medium density profile across the sites, which indicates that this typology may be more viable overall.

## 4.2 Sensitivity tests and alternative development scenarios

### Revenue and costs sensitivities

The first two sensitivity tests were to vary the cost and revenue assumptions across the first three development sites by between 5 and 20 per cent. The results of these sensitivities are shown in the tables below. As expected, larger variations in costs and revenues have larger impacts on the underlying RLV, with the RLV being marginally more sensitive to revenue fluctuations than cost fluctuations.

Site 1 (mixed use-high density) has a positive RLV in all scenarios except for -5% to -20% revenues and +20% costs. Site 3 (medium density) does not have a positive RLV in any scenario. Even with a 20% increase of revenue, it still has a RLV of -\$2,430,000. Site 4 (townhouses) is positive in all scenarios.

Overall, these sensitivities point to the robust feasibility of townhouse products in the current Geelong market. Meanwhile, high density and medium apartments developments are more marginal and susceptible to fluctuations in market conditions. For example, supply constraints in construction materials are widely reported to be driving up development costs, which may continue into the future.

**TABLE 8: RLV UNDER VARIABLE REVENUES**

Site	Typology	-20%	-10%	-5%	0%	5%	10%	20%
Site 1	Mixed Use: High Density	-\$3,920,000	-\$2,470,000	-\$1,040,000	\$340,000	\$1,600,000	\$2,910,000	\$4,190,000
Site 3	Apartment: Med. Density	-\$7,790,000	-\$6,890,000	-\$5,990,000	-\$5,100,000	-\$4,200,000	-\$3,320,000	-\$2,430,000
Site 4	Townhouse: Low Density	\$990,000	\$1,520,000	\$2,040,000	\$2,570,000	\$3,100,000	\$3,630,000	\$4,160,000

Source: m3property, 2021

**TABLE 9: RLV UNDER VARIABLE COSTS**

Site	Typology	-20%	-10%	-5%	0%	5%	10%	20%
Site 1	Mixed Use: High Density	\$6,010,000	\$4,910,000	\$3,820,000	\$2,720,000	\$1,600,000	\$530,000	-\$620,000
Site 3	Apartment: Med. Density	-\$230,000	-\$1,220,000	-\$2,210,000	-\$3,210,000	-\$4,200,000	-\$5,200,000	-\$6,210,000
Site 4	Townhouse: Low Density	\$4,460,000	\$4,120,000	\$3,780,000	\$3,440,000	\$3,100,000	\$2,760,000	\$2,420,000

Source: m3property, 2021

### *Impact of affordable housing contribution*

The tables below report the results of implementing a social housing contribution of 2.2% of developed floorspace. As expected, this contribution results in a reduction of RLV for all sites. However, the RLV for Site 1 and 4 still stay positive.

This confirms that affordable housing contributions have a negative impact on feasibility, but the impact is relatively small overall. These impacts will be far outweighed by the economic and social benefits generated by affordable housing, which will be discussed further in the next section.

**TABLE 10: RLV AFTER AFFORDABLE HOUSING CONTRIBUTIONS**

Site	Typology	Base Case	Social Housing Contribution (2.2%)	Decrease in RLV
Site 1	Mixed Use - High Density	\$1,600,000	\$1,100,000	-\$500,000
Site 3	Apartment - Medium Density	-\$4,200,000	-\$4,600,000	-\$400,000
Site 4	Townhouses - Low Density	\$3,100,000	\$2,900,000	-\$200,000

Source: m3property, 2021

# 5. Conclusions

## 5.1 Summary of findings

The purpose of this report is to provide a feasibility study of the Barwon Water Site. The feasibility analysis compares costs and revenues for two development scenarios to determine if the projects would be financially viable under current property market conditions.

Geelong's population has grown strongly in the last two decades and that growth is expected to continue. This will require significant supply of new housing to meet demand. The current housing stock has only a very small share of apartment dwellings, but rental data indicates that demand for apartments could be on the rise. With such a large number of dwellings to be built over the coming decades, even a small uptick in the *share* of apartments within the mix of new development would result in significant *number* of new apartments built in Geelong.

This somewhat optimistic outlook for apartment is yet to be seen in the current market data and, indeed, this is reflected in the results of the feasibility testing. The results show that townhouses are feasible in both options and all of the sensitivity tests. There were mixed results for medium density (2-3 storeys) and high density (5-10 storeys) apartment developments, with many of the sites sitting just above or below the breakeven point.

## 5.2 Implications

### *Feasibility of development over the medium to long term*

The findings indicate that the development of each site in the precinct is not feasible under current market conditions. Specifically, this comes down to apartment developments not being feasible. To a degree, this is an expected result, with an immature apartment market in the Geelong area.

The results do not say that apartment development will be unfeasible in the long term (around 10-15 years) or even in the medium term (around 5-10 years). Many factors will determine feasibility over this timeframe: the post-COVID economic recovery, the return of international migration, changes in household's location and dwelling preferences after COVID, transport infrastructure investments (including rail connections between Geelong and Melbourne), the development trajectories of alternative precincts and alternative regional cities and many other factors.

More importantly for council's decision making, the housing that is ultimately built around the train station at South Geelong will be in place for the *very* long term. A short-sighted view that would see development happen sooner but with fewer, less dense dwellings (i.e. townhouses covering the precinct) to benefit from ready access to quality public transport. A more patient view that allows more dwellings to be built at higher densities (i.e. apartments) would ensure more households can live with good accessibility and, in turn, greater economic and social benefits are realised from the UDF.

The longer view is further reinforced by the constrained land that surrounds the Barwon Water Site. The established residential area comprises many lots with heritage controls and land parcels that are difficult to consolidate for medium and higher density development. This means there are fewer

alternative sites to realise the dwellings yields that would be preferable in close proximity to a train station.

#### *Relative feasibility of the two options and staging of the development*

Option 1 included more higher density developments up to 10 storeys and Option 2 included more medium density developments up to 7 storeys. As noted, there were mixed feasibility results for the medium and higher density sites. However, the combination of more medium density sites under Option 2, resulted in a slightly better feasibility when all of the costs and revenues across all sites were added together.

Regardless, feasibility of the apartment developments is marginal at best and consideration could be given to how to stage development across the precinct. As noted in other analysis of the precinct, a logical starting point would be the eastern townhouse developments. This would allow some time for the apartments market to catch up and also bring some activation to the area, which could attract further demand from prospective residents. Activation of the vacant portions of the precinct with low cost interim upgrades such as landscaping and 'pop up' initiatives, such as food truck parks or markets, could further expedite demand for development of the successive apartments blocks.

#### *Social housing contributions*

The results show that affordable housing requirements add a non-trivial cost to developments in the test scenarios. However, the impact is relatively small overall, particularly in comparison to the impacts of the cost and revenue fluctuations.

There is a demonstrable need for affordable housing in the Geelong municipality. The benefits of providing this type of housing far outweigh the costs identified in this feasibility analysis. Affordable housing is effective for alleviating poverty, improving labour market functions and the diversity of local communities. This brings benefits in the form of:

- Reduced social costs in the health, justice and social services, and
- Improved labour participation and productivity of tenants of affordable housing.

Cost-benefit analysis conducted by SGS shows consistently that projects typically deliver at least \$3 in benefits for every \$1 investment in the development of affordable housing.

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